

WHAT IS CLAIMED IS:

1. A grinder vehicle for removing traffic markings from an underlying roadway surface, comprising:

5 a drive unit having a frame assembly supported by a plurality of wheels;

a drive unit engine that drives at least one of the plurality of wheels;

a drive shaft connected to the drive unit engine; and

10 a grinder head assembly connected to the frame assembly of the drive unit and driven by the drive shaft of the drive unit engine, wherein the grinder head assembly comprises a plurality of grinder heads for removing the traffic markings from the underlying roadway surface.

15 2. A grinder vehicle of claim 1, wherein each grinder head includes a wheel having a plurality of bits extending from an outer perimeter thereof that contact and grind the traffic markings from the underlying roadway surface, while minimizing the grinding of the underlying roadway surface.

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3. A grinder vehicle of claim 2, wherein each grinder bit comprises a tungsten carbide material.

25 4. A grinder vehicle of claim 1, further comprising a downward pressure adjuster connected to the grinder head assembly for varying a downward pressure that each grinder head applies to the traffic markings and the underlying roadway surface.

30 5. A grinder vehicle of claim 1, further comprising a hydraulic cylinder connected to the grinder head assembly for varying a downward pressure that each grinder head applies to the traffic markings and the underlying roadway surface.

6. A grinder vehicle of claim 1, further comprising a pivot adjuster connected to the grinder head assembly for pivotally adjusting the position of the grinder head assembly with respect to the underlying roadway surface.

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7. A grinder vehicle of claim 1, further comprising:

a housing assembly connected to the frame assembly of the drive unit and housing the grinder head assembly; and

10 a pivot adjuster that moves the housing assembly relative to the frame assembly of the drive unit to pivotally adjust the positioning of the grinder head assembly with respect to the underlying roadway surface.

15 8. A grinder vehicle of claim 7, wherein the pivot adjuster is a threaded rod that threadably engages a threaded arm of the housing assembly to move the threaded arm along the threaded rod upon rotation of the threaded rod, which pivotally adjusts the positioning of the grinder head assembly with respect to the underlying roadway surface.

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9. A grinder vehicle of claim 1, wherein drive unit engine is at least a twenty four horsepower engine

25 10. A grinder vehicle of claim 1, wherein drive unit engine drives the drive unit to a speed in a range of approximately zero miles per hour to approximately twelve miles per hour.

30 11. A grinder vehicle of claim 1, wherein drive shaft of the drive unit engine rotates each grinder head to a speed in a range of approximately 200 revolutions per minute to approximately 1600 revolutions per minute.

12. A grinder vehicle for removing traffic markings from an underlying roadway surface, comprising:

a drive unit having a frame assembly supported by a plurality of wheels;

a drive unit engine that drives at least one of the plurality of wheels;

5 a drive shaft connected to the drive unit engine; and

a grinder head assembly connected to the frame assembly of the drive unit and comprising a main shaft that is driven by the drive shaft of the drive unit engine, wherein a plurality of grinder heads for removing the traffic markings from the underlying roadway surface are mounted to and rotatable by the main shaft of the grinder head assembly; and

10 a downward pressure adjuster connected to the grinder head assembly for varying a downward pressure that each grinder head applies to the traffic markings and the underlying roadway surface.

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13. A grinder vehicle of claim 12, wherein the downward pressure adjuster is a hydraulic cylinder.

14. A grinder vehicle of claim 12, wherein each grinder head includes a wheel having a plurality of tungsten carbide bits extending from an outer perimeter thereof that contact and grind the traffic markings from the underlying roadway surface, while minimizing the grinding of the underlying roadway surface.

25 15. A grinder vehicle of claim 12, further comprising a pivot adjuster connected to the grinder head assembly for pivotally adjusting the position of the grinder head assembly with respect to the underlying roadway surface.

30 16. A grinder vehicle of claim 12, further comprising:
a housing assembly connected to the frame assembly of the drive unit and housing the grinder head assembly; and

a pivot adjuster that moves the housing assembly relative the frame assembly of the drive unit to pivotally adjust the

positioning of the grinder head assembly with respect to the underlying roadway surface.

17. A grinder vehicle of claim 16, wherein the pivot adjuster
5 is a threaded rod that threadably engages a threaded arm of the housing assembly to move the threaded arm along the threaded rod upon rotation of the threaded rod, which pivotally adjusts the positioning of the grinder head assembly with respect to the underlying roadway surface.

10 18. A grinder vehicle of claim 12, wherein drive unit engine is at least a twenty four horsepower engine

19. A grinder vehicle of claim 12, wherein drive unit engine
15 drives the drive unit to a speed in a range of approximately zero miles per hour to approximately twelve miles per hour.

20. A grinder vehicle of claim 12, wherein drive shaft of the drive unit engine rotates each grinder head to a speed in a range
20 of approximately 200 revolutions per minute to approximately 1600 revolutions per minute.

21. A grinder vehicle for removing traffic markings from an underlying roadway surface, comprising:

25 a drive unit having a frame assembly supported by a plurality of wheels;

a drive unit engine that drives at least one of the plurality of wheels;

a drive shaft connected to the drive unit engine; and

30 a grinder head assembly connected to the frame assembly of the drive unit and comprising a main shaft that is driven by the drive shaft of the drive unit engine, wherein a plurality of grinder heads for removing the traffic markings from the underlying roadway

surface are mounted to and rotatable by the main shaft of the grinder head assembly;

5 a hydraulic cylinder connected to the grinder head assembly for varying a downward pressure that each grinder head applies to the traffic markings and the underlying roadway surface; and

a pivot adjuster connected to the grinder head assembly for pivotally adjusting the position of the grinder head assembly with respect to the underlying roadway surface.

10 22. A grinder vehicle of claim 21, wherein each grinder head includes a wheel having a plurality of tungsten carbide bits extending from an outer perimeter thereof that contact and grind the traffic markings from the underlying roadway surface, while minimizing the grinding of the underlying roadway surface.

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23. A grinder vehicle of claim 21, further comprising:

a housing assembly connected to the frame assembly of the drive unit and housing the grinder head assembly; and

20 a pivot adjuster that moves the housing assembly relative the frame assembly of the drive unit to pivotally adjust the positioning of the grinder head assembly with respect to the underlying roadway surface.

25 24. A grinder vehicle of claim 23, wherein the pivot adjuster is a threaded rod that threadably engages a threaded arm of the housing assembly to move the threaded arm along the threaded rod upon rotation of the threaded rod, which pivotally adjusts the positioning of the grinder head assembly with respect to the underlying roadway surface.

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25. A grinder vehicle of claim 21, wherein drive unit engine is at least a twenty four horsepower engine

26. A grinder vehicle of claim 21, wherein drive unit engine drives the drive unit to a speed in a range of approximately zero miles per hour to approximately twelve miles per hour.

5 27. A grinder vehicle of claim 21, wherein drive shaft of the drive unit engine rotates each grinder head to a speed in a range of approximately 200 revolutions per minute to approximately 1600 revolutions per minute.

10 28. A grinder for removing traffic markings from an underlying roadway surface, comprising:

 a grinder head assembly comprising a plurality of grinder heads for removing the traffic markings from the underlying roadway surface; and

15 a downward pressure adjuster connected to the grinder head assembly for varying a downward pressure that each grinder head applies to the traffic markings and the underlying roadway surface.

20 29. A grinder for removing traffic markings from an underlying roadway surface, comprising:

 a grinder head assembly comprising a plurality of grinder heads for removing the traffic markings from the underlying roadway surface; and

25 a pivot adjuster connected to the grinder head assembly for pivotally adjusting the position of the grinder head assembly with respect to the underlying roadway surface.